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Liquid Crystal) as a typical birefringence LCD has been actively conducted since the SSFLC (Surface Stabilized Ferroelectric Liquid Crystal) was proposed.

Usually in ferroelectric liquid crystals, state 1 and state 2 concerning the orientation of liquid crystal molecules M with respect to externally applied electric field E (P_s denotes spontaneous polarization) are switched in the chiral smectic (C) phase, as shown in Fig.1. As viewed from above, the central axis of a virtual cone shown in Fig.1 coincides with the orientation of the alignment layer (rubbing direction for rubbing films, or evaporation direction for obliquely evaporated SiO films). A change in the orientation of liquid crystal molecules M is represented as a change in light transmittance when the liquid crystal element is placed between polarizer plates which are orthogonal to each other; as shown in Fig.2, the transmittance sharply changes from 0% to 100% at threshold V_{th} with respect to the impressed electric field.

SSFLC displays are fast in response (approx. 1000 times faster than conventional nematic LCDs) and have the ability of memory, which solves the problem of flickers often seen in cathode ray tubes and TN displays. Even when a